A SOLAR ELECTRIC PROPULSION MISSION TO THE MOON AND BEYOND!

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The technological development of solar electric propulsion has advanced significantly over the last few years. Mission planners are now seriously studying which missions would benefit most from solar electric propulsion (SEP) and NASA's Solar System Exploration Division is contributing funding to ground and space qualification tests. In response to the impending release of NASA's Announcement of Opportunity for Discovery class planetary missions we have undertaken a pre-Phase A study of an SEP mission to the moon. The advantages of such a mission over conventionally powered missions are exploited in this mission concept to minimize cost while maximizing payload and science return, Moreover, solar electric propulsion allows extensive orbit plane changes and altitude changes at a modest expenditure of fuel, and at the end of the lunar mapping phase allows the spacecraft to leave the lunar sphere of influence and explore other solar system objects. This mission will not only return a wealth of new scientific data but will open up a whole new era of planetary exploration.

Submittal Information

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2. Symposium E, 1 Precursor Missions to the Moon (Invited)

3. R. H. Manka and Bernard Foing

4. Standard

5. Oral presentation